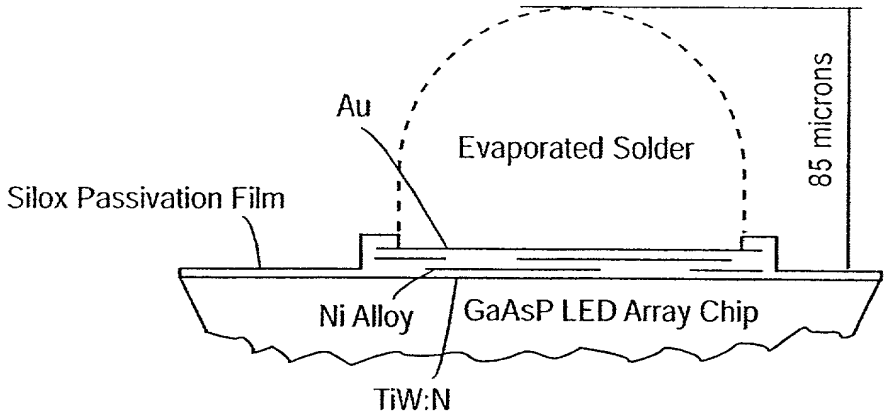

FIG. 1(a)
prior art

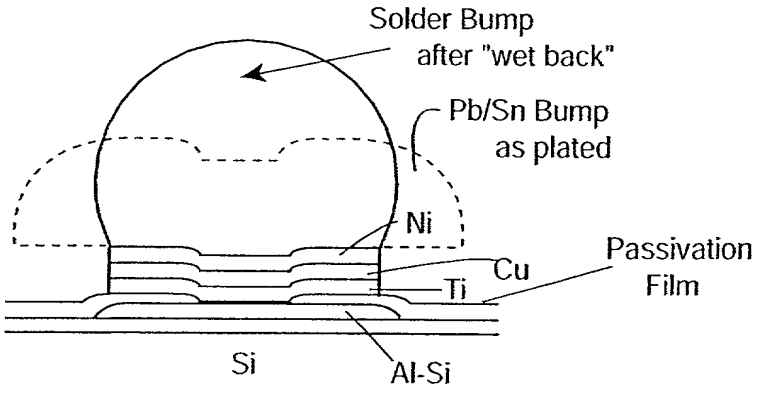

FIG. 1(b)
prior art

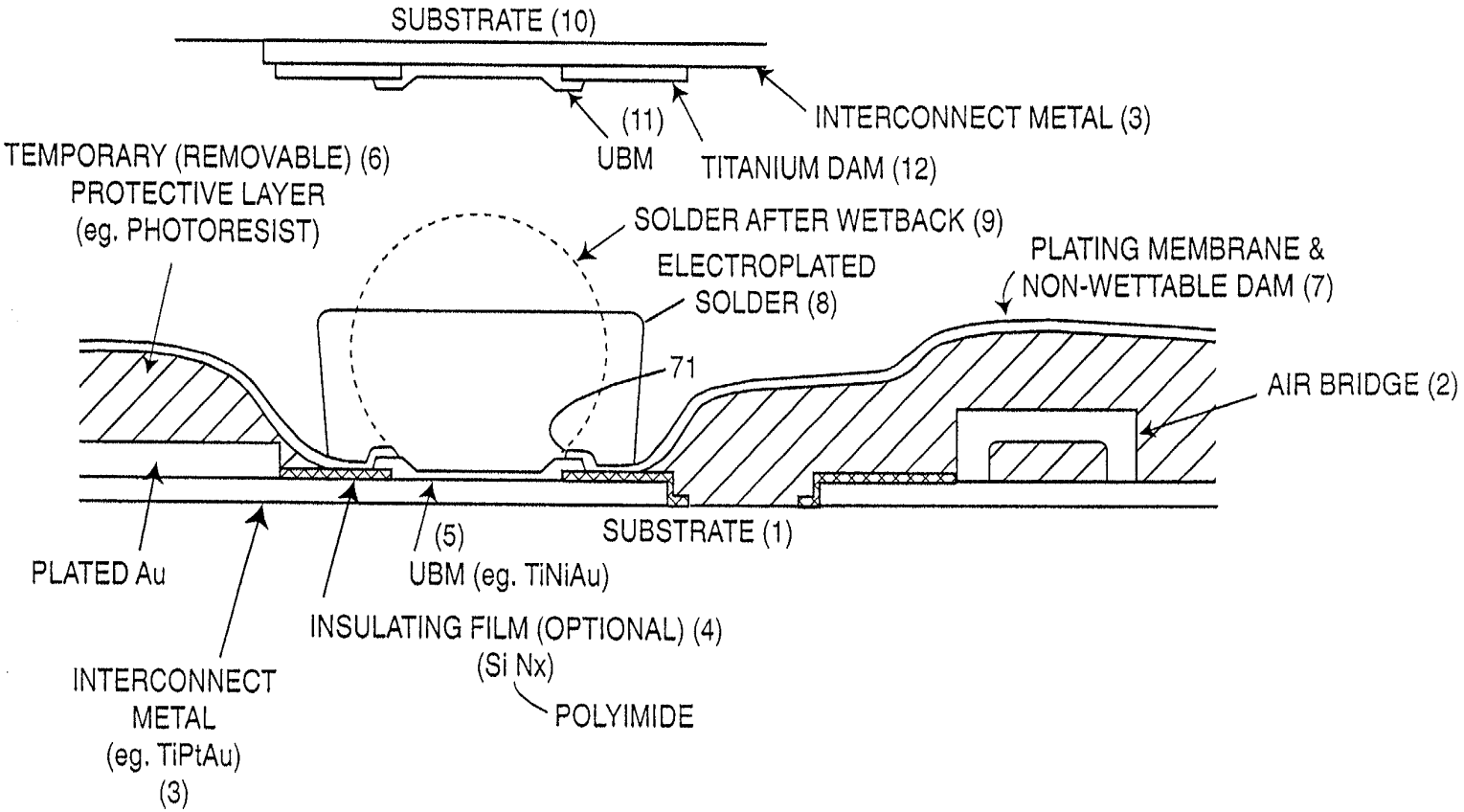
SUBSTRATE (10)
(11)
UBM
TITANIUM DAM (12)
INTERCONNECT METAL (3)
TEMPORARY (REMOVABLE) (6)
PROTECTIVE LAYER
(eg. PHOTORESIST)
SOLDER AFTER WETBACK (9)
ELECTROPLATED
SOLDER (8)
PLATING MEMBRANE &
NON-WETTABLE DAM (7)
71
AIR BRIDGE (2)
PLATED Au
(5)
UBM (eg. TiNiAu)
SUBSTRATE (1)
INSULATING FILM (OPTIONAL) (4)
(Si Nx)
POLYIMIDE
INTERCONNECT
METAL
(eg. TiPtAu)
(3)

FIG. 2

EP 0 954 015 A2

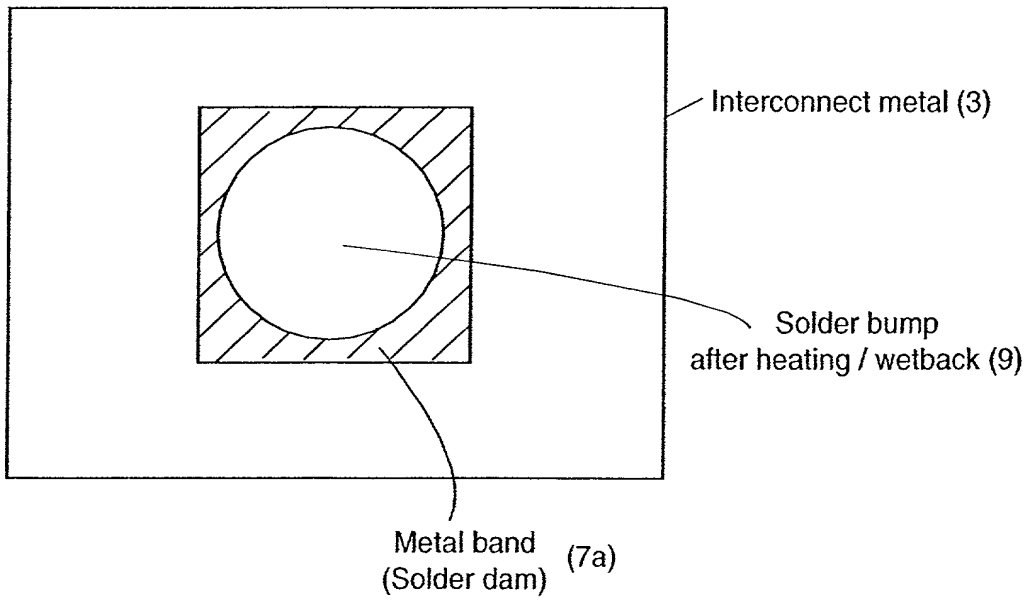

FIG. 2(a)

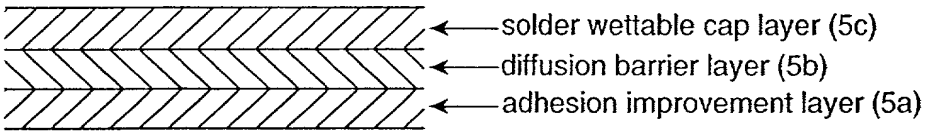
solder wettable cap layer (5c)
diffusion barrier layer (5b)
adhesion improvement layer (5a)

FIG. 2(b)

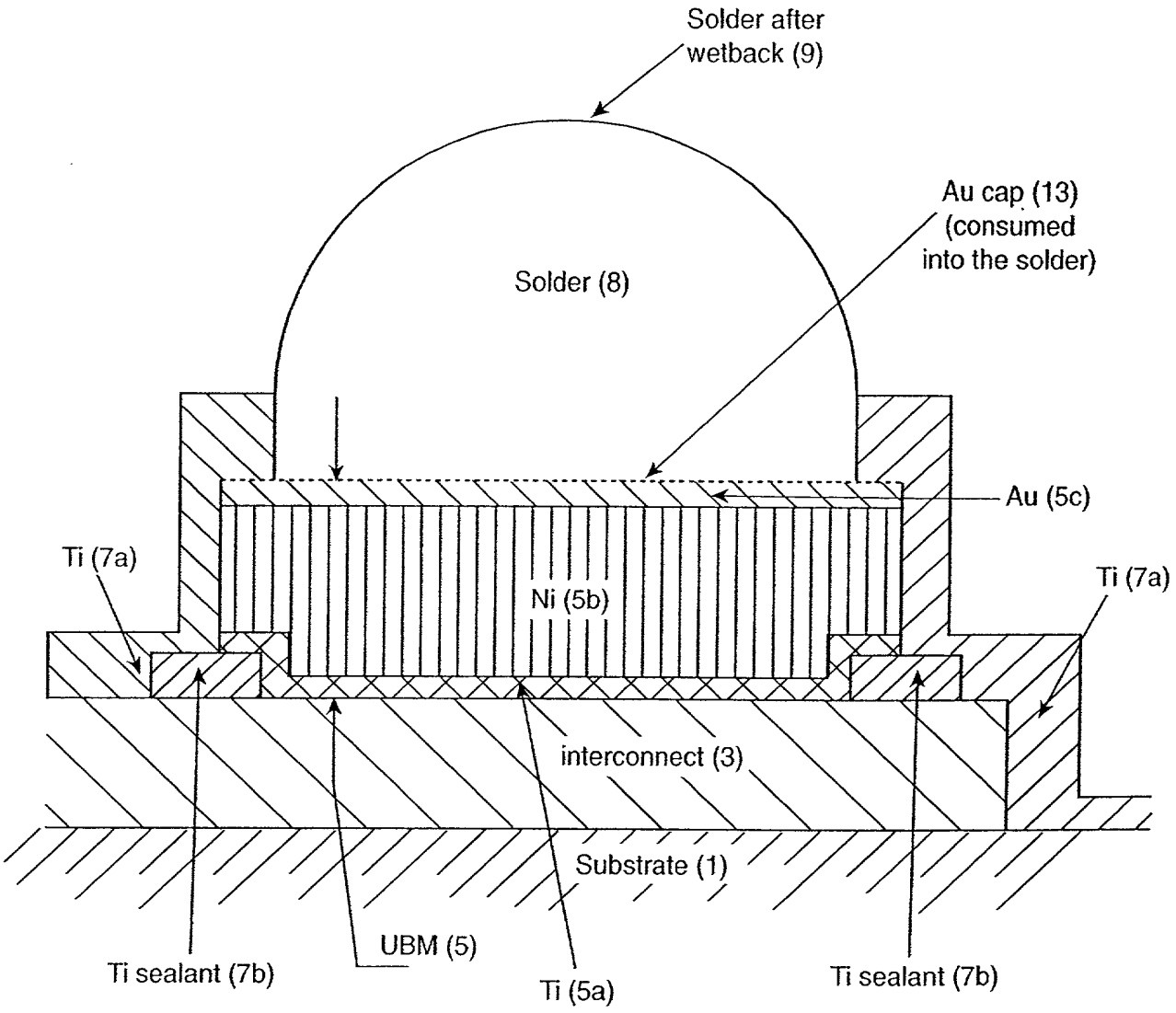
Solder after
wetback (9)
Au cap (13)
(consumed
into the solder)
Solder (8)
Au (5c)
Ti (7a)
Ni (5b)
Ti (7a)
interconnect (3)
Substrate (1)
UBM (5)
Ti sealant (7b)
Ti (5a)
Ti sealant (7b)

FIG. 3

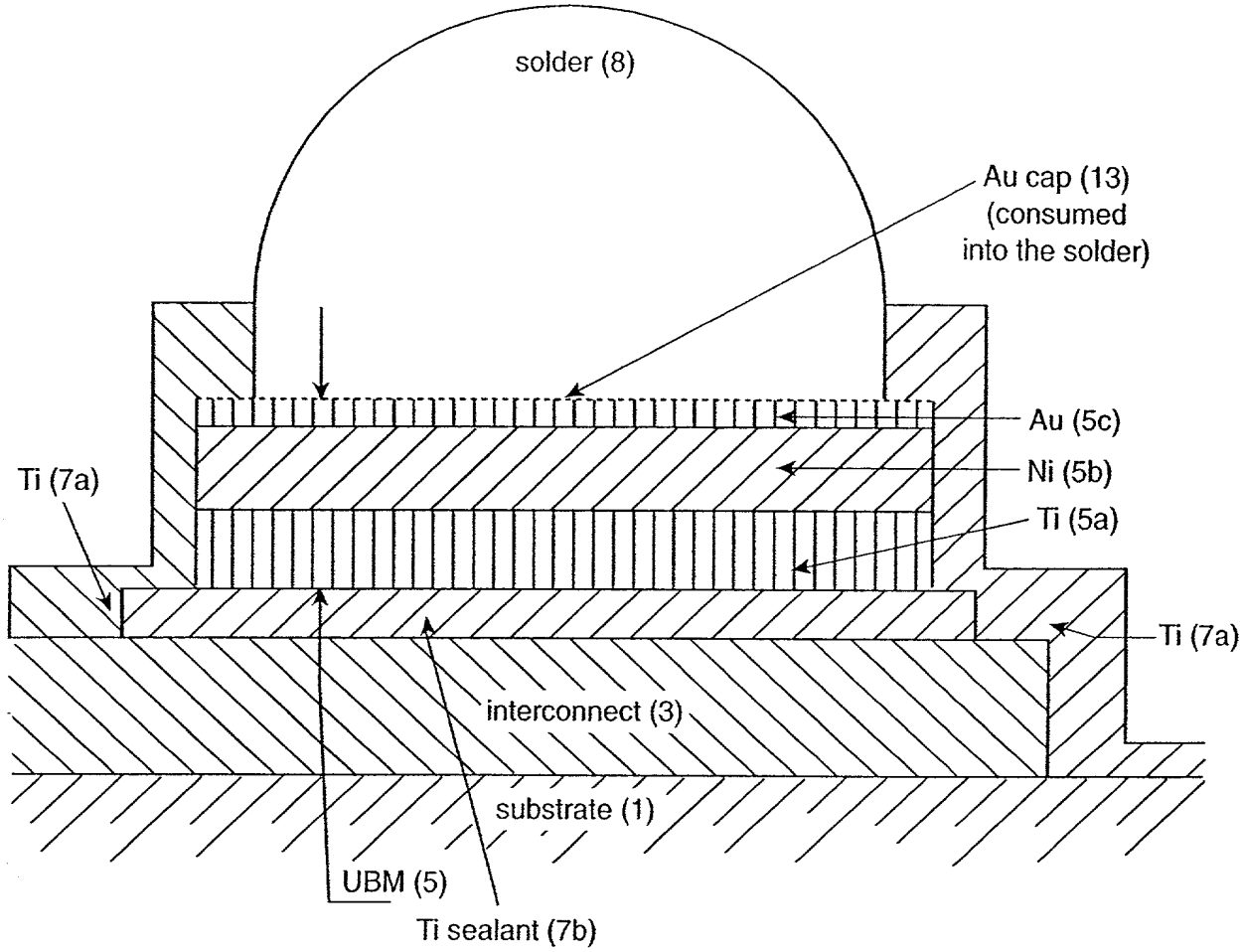
solder (8)
Au cap (13)
(consumed
into the solder)
Au (5c)
Ni (5b)
Ti (5a)
Ti (7a)
Ti (7a)
interconnect (3)
substrate (1)
UBM (5)
Ti sealant (7b)

FIG. 3(a)

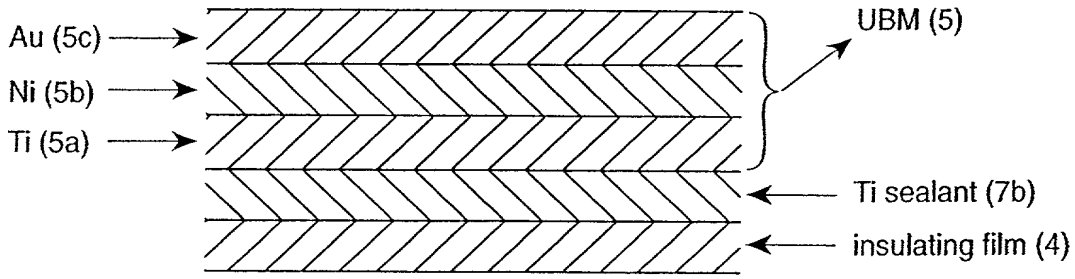
Au (5c)
Ni (5b)
Ti (5a)
UBM (5)
Ti sealant (7b)
insulating film (4)

FIG. 3(b)

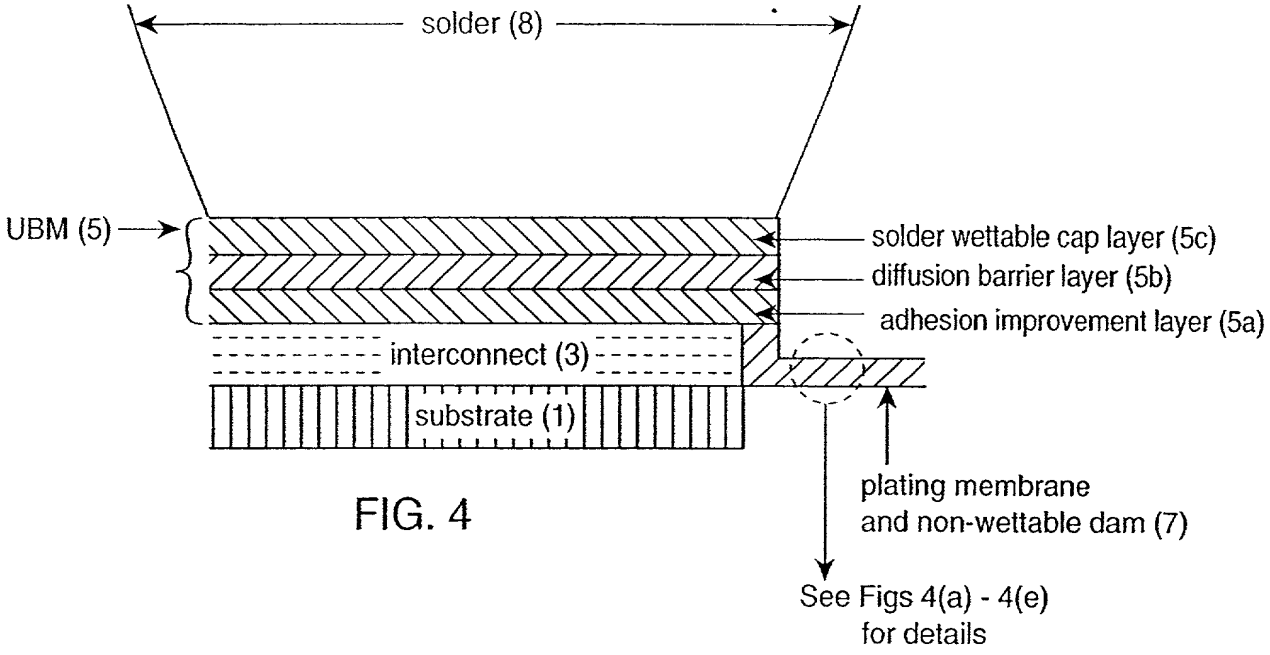

FIG. 4

FIG. 4(a)

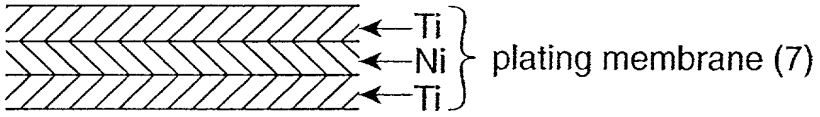

FIG. 4(b)

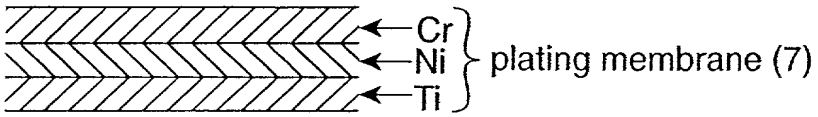

FIG. 4(c)

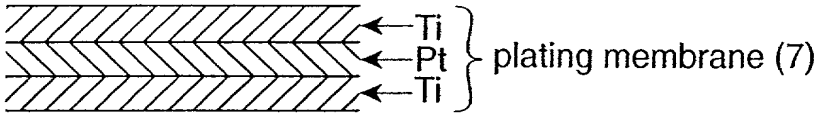

FIG. 4(d)

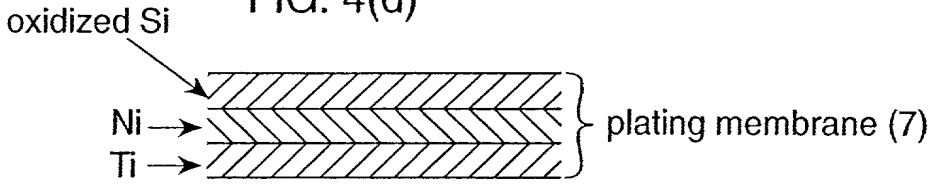

FIG. 4 (e)